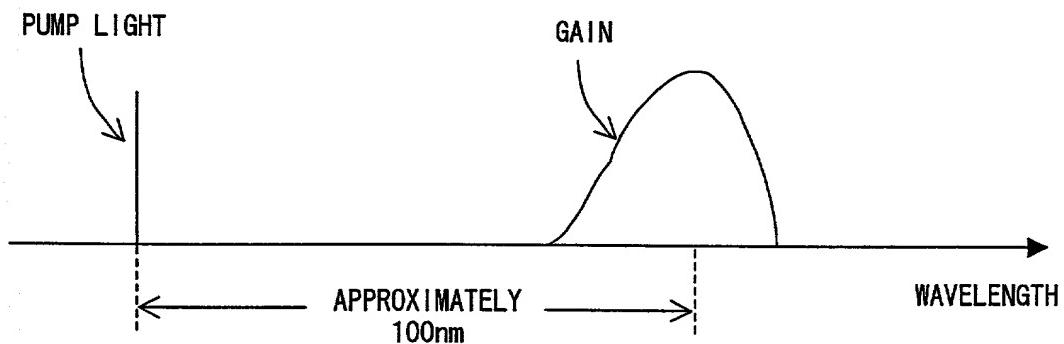
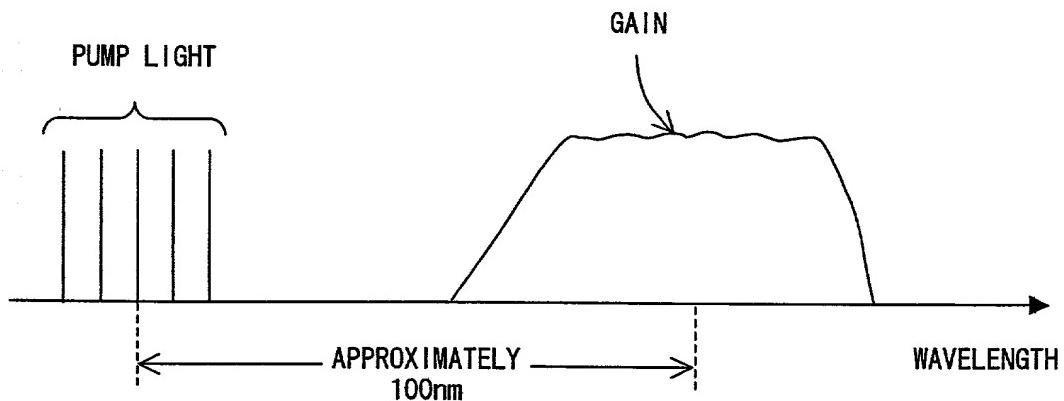


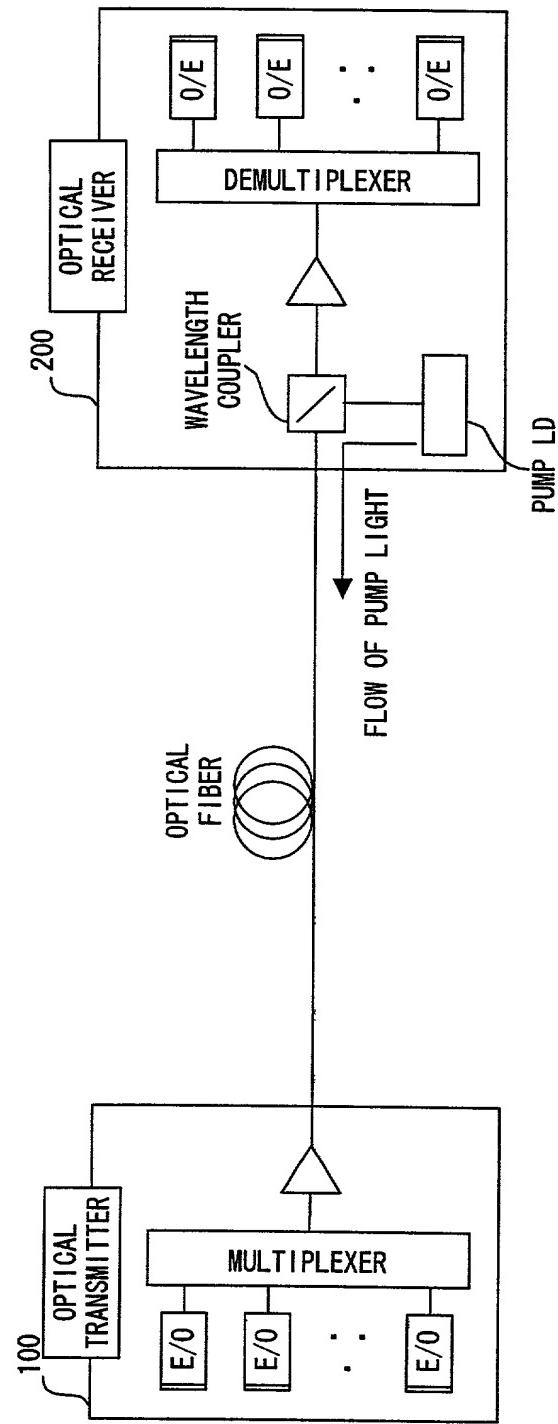
FIG. 1



F I G. 2 A



F I G. 2 B



**F I G. 3**

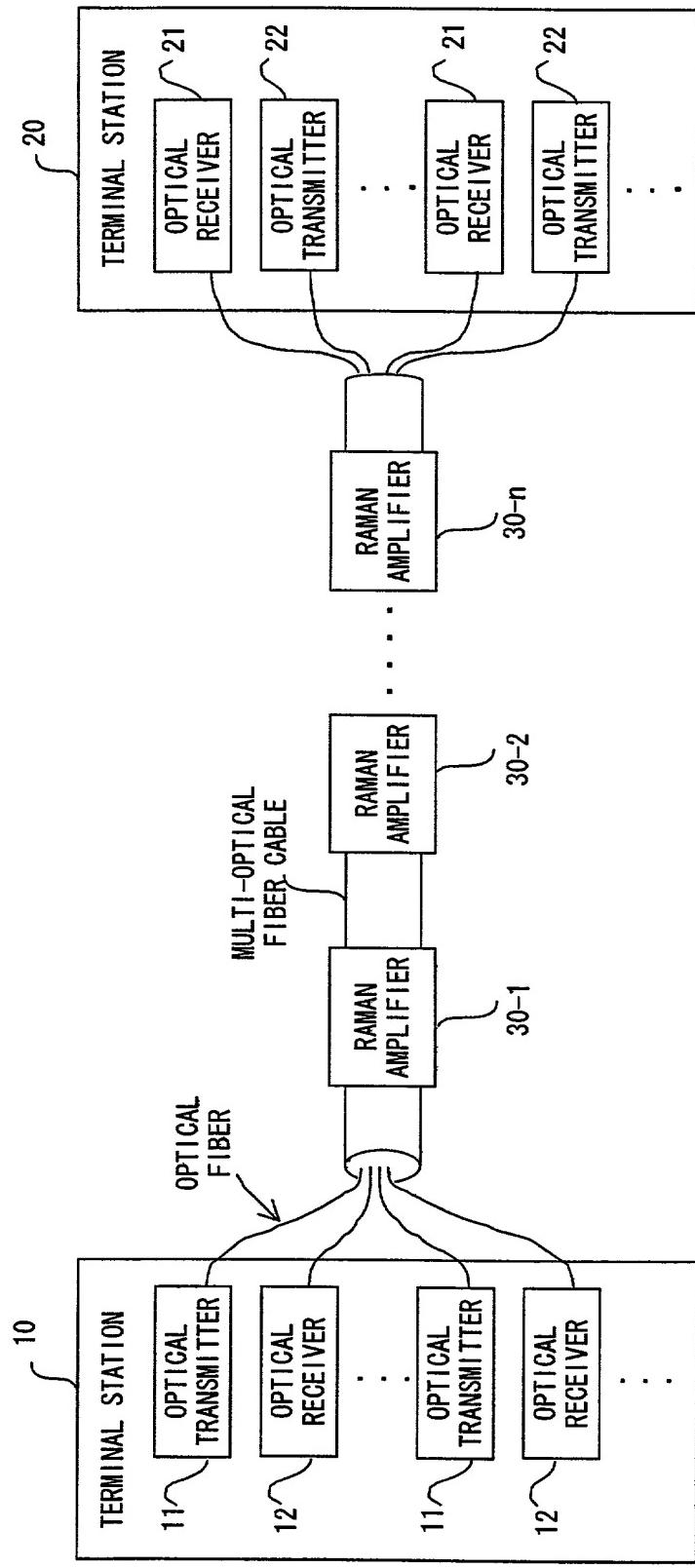
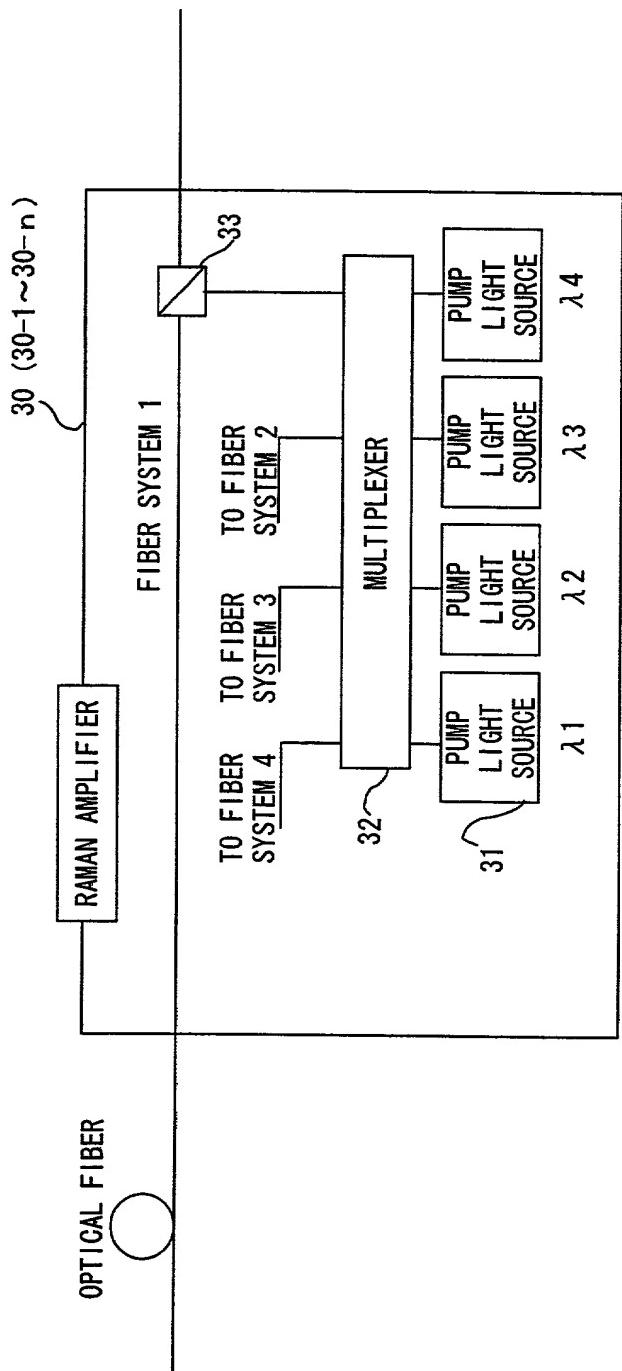


FIG. 4



**F I G. 5**

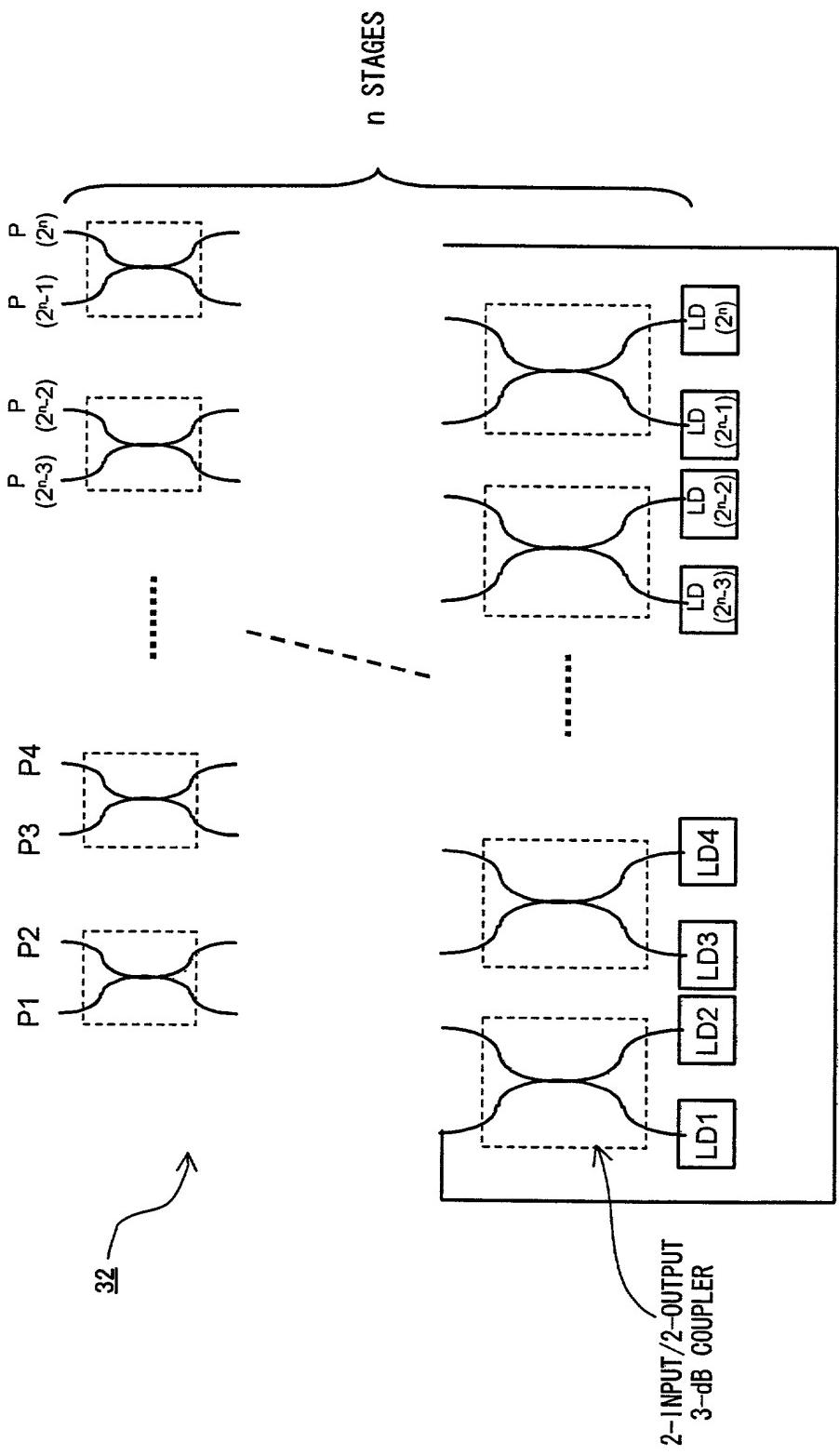
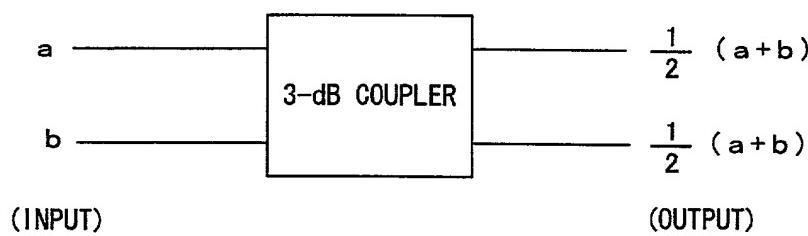
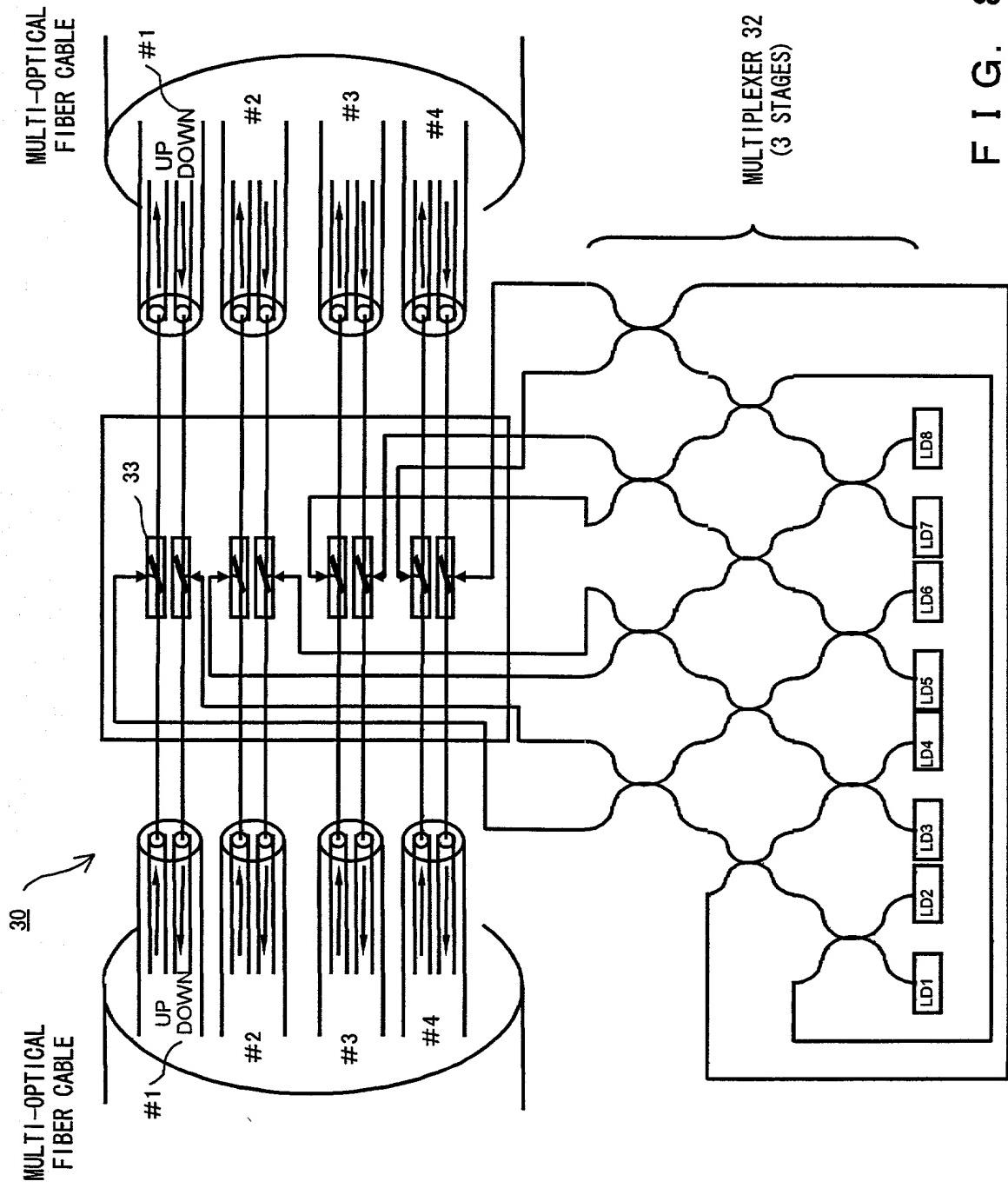


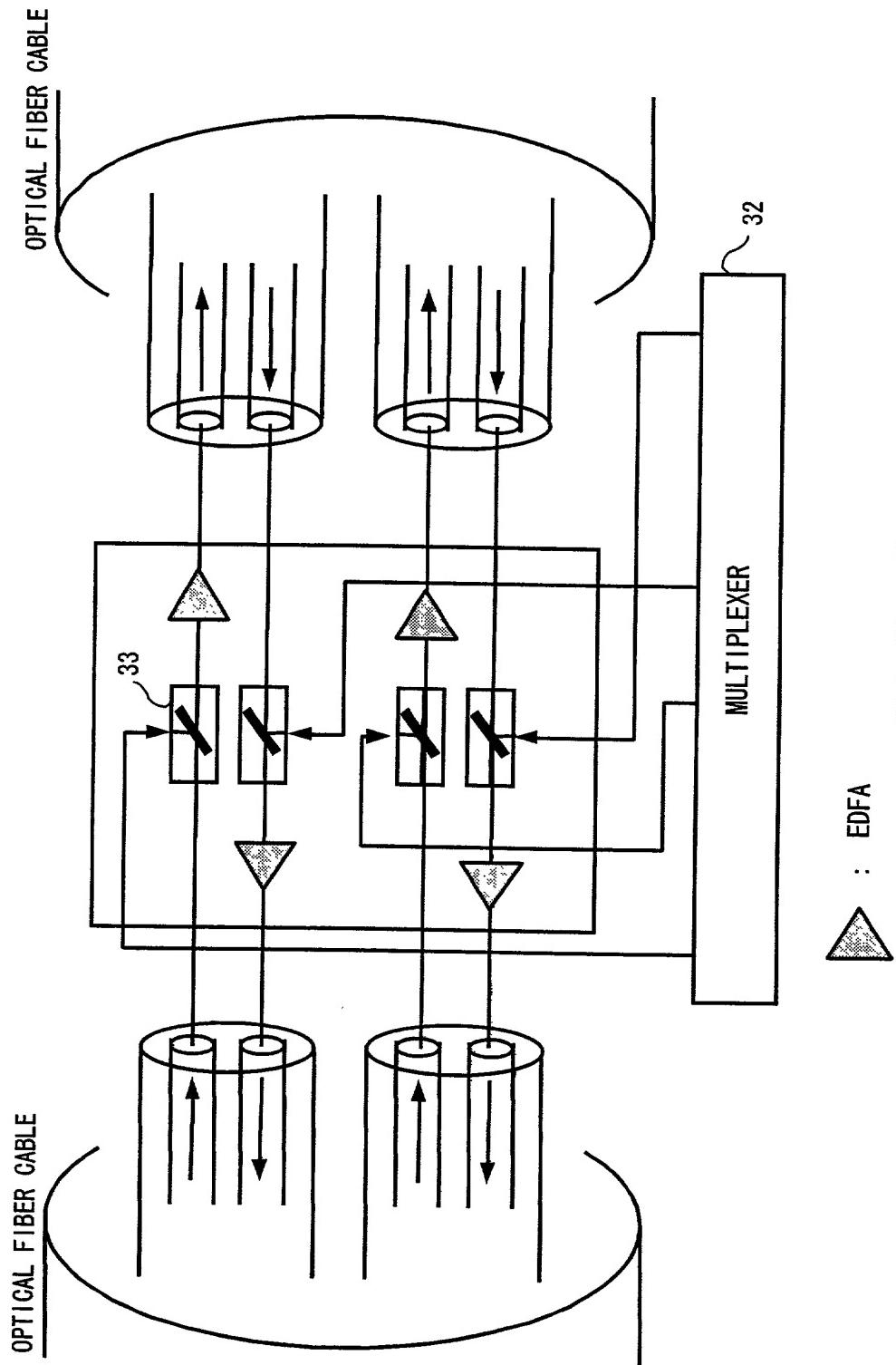
FIG. 6



F I G. 7

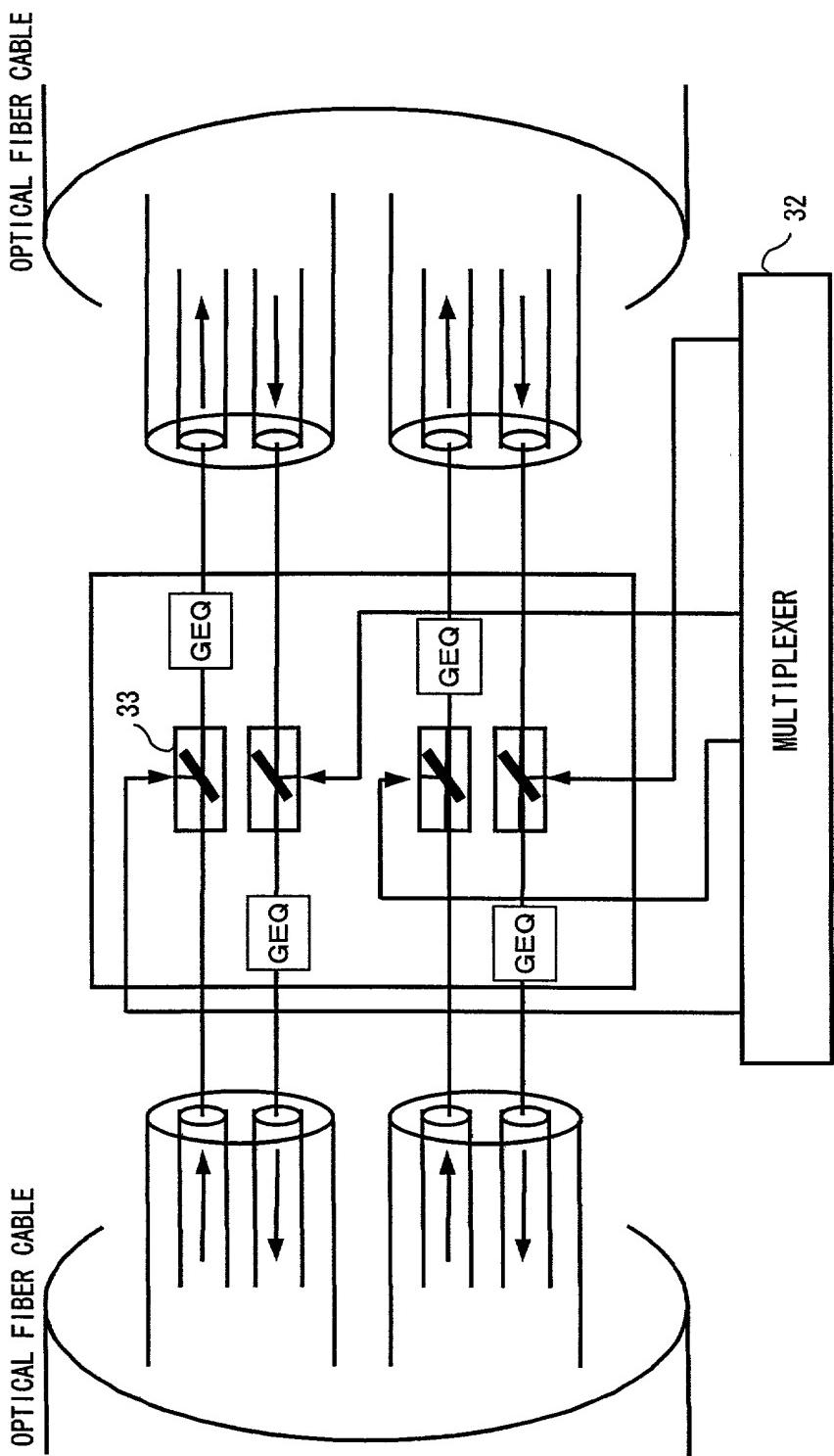
F I G. 8





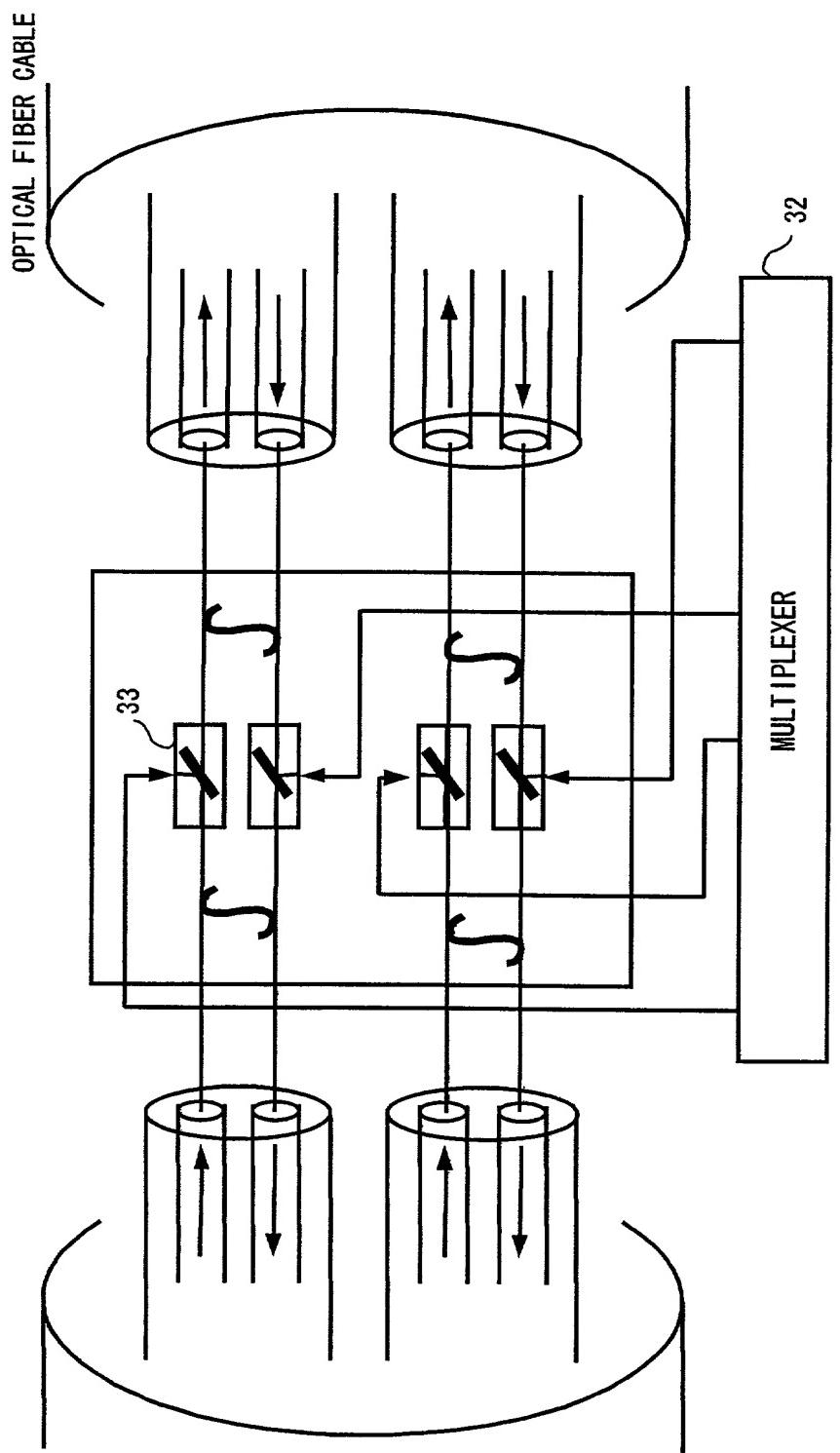
F I G. 9

△ : EDFA



**GEQ** : GAIN EQUALIZER

FIG. 10



*S* : OTDR PATH

FIG. 11

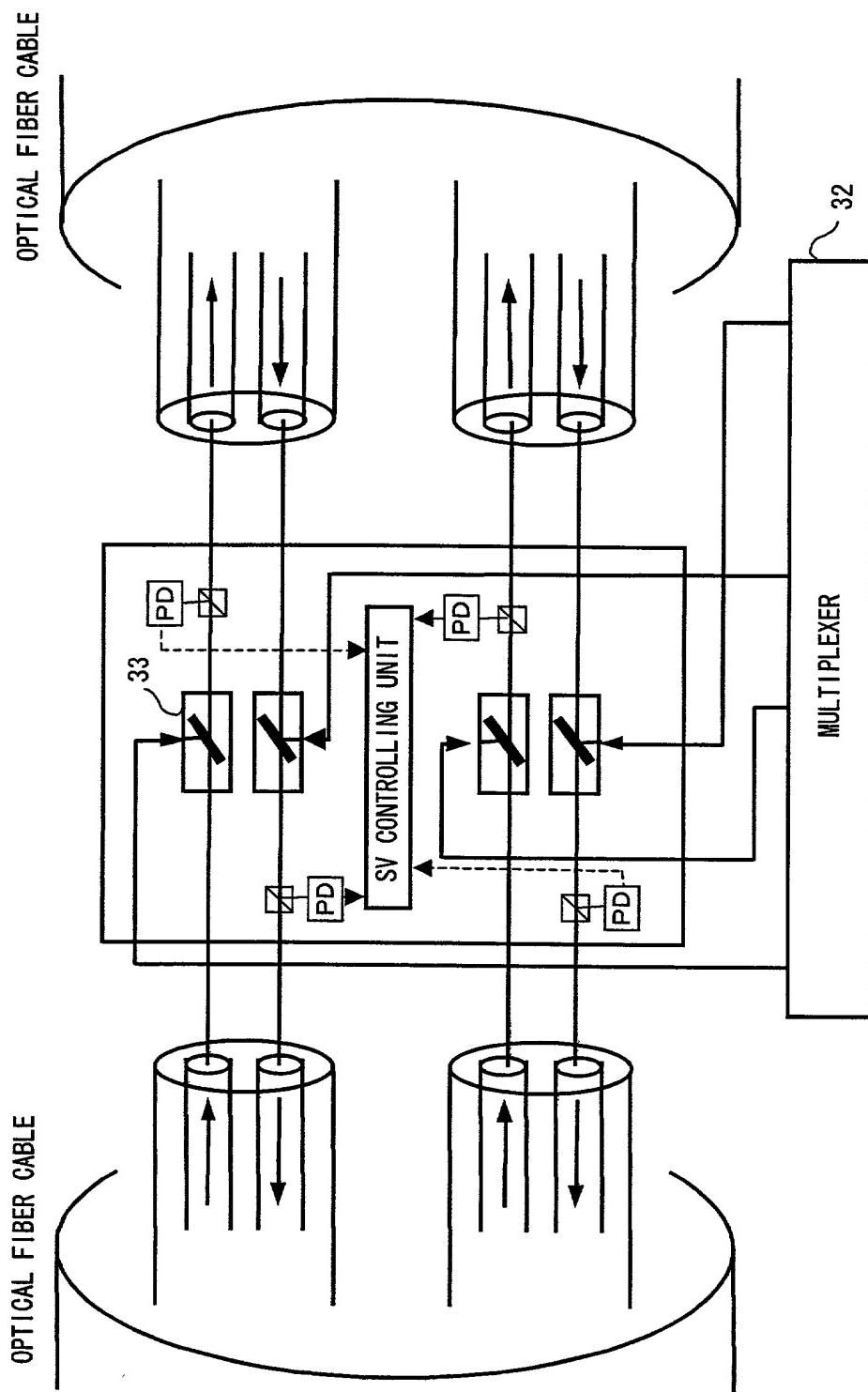
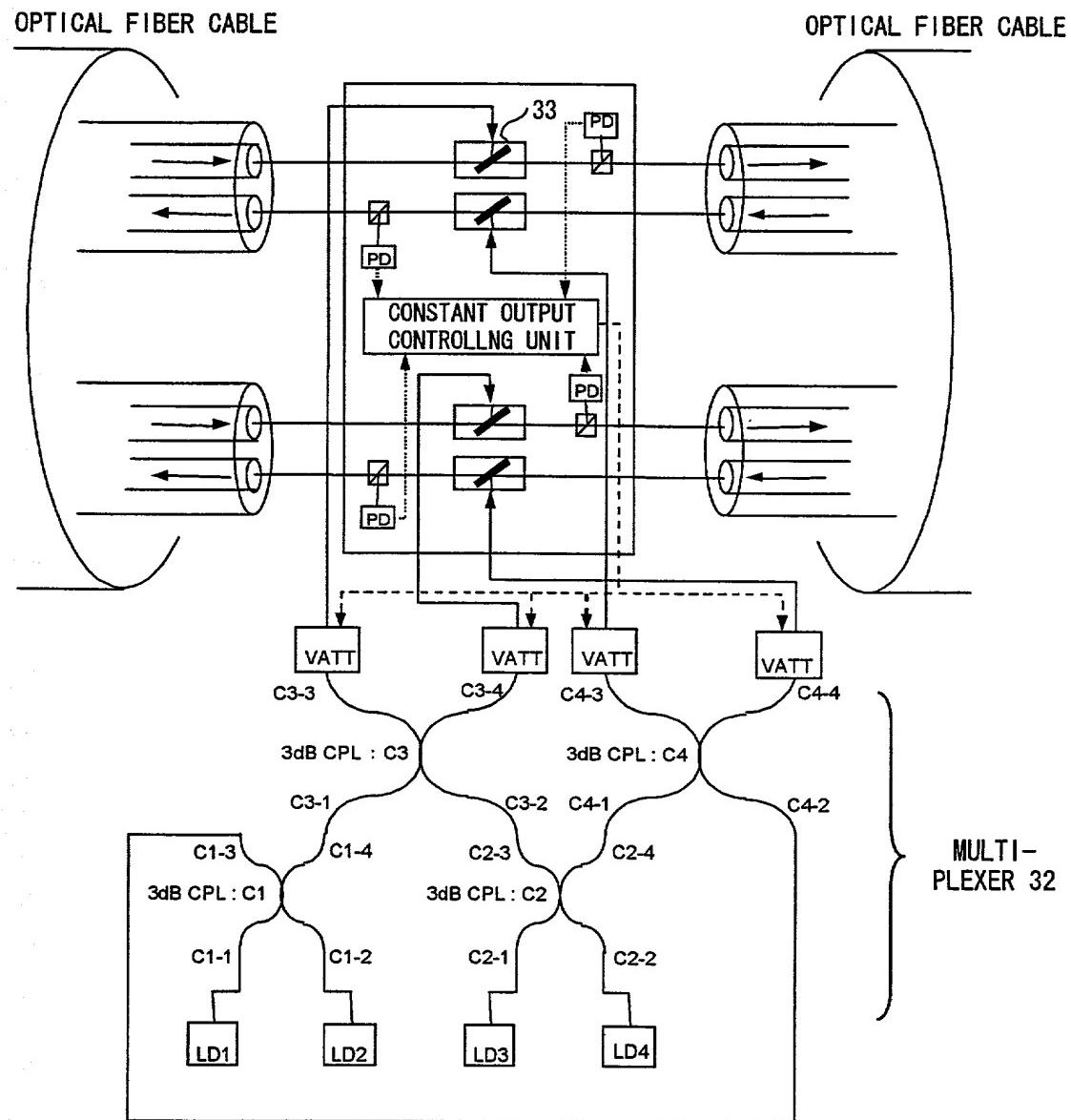
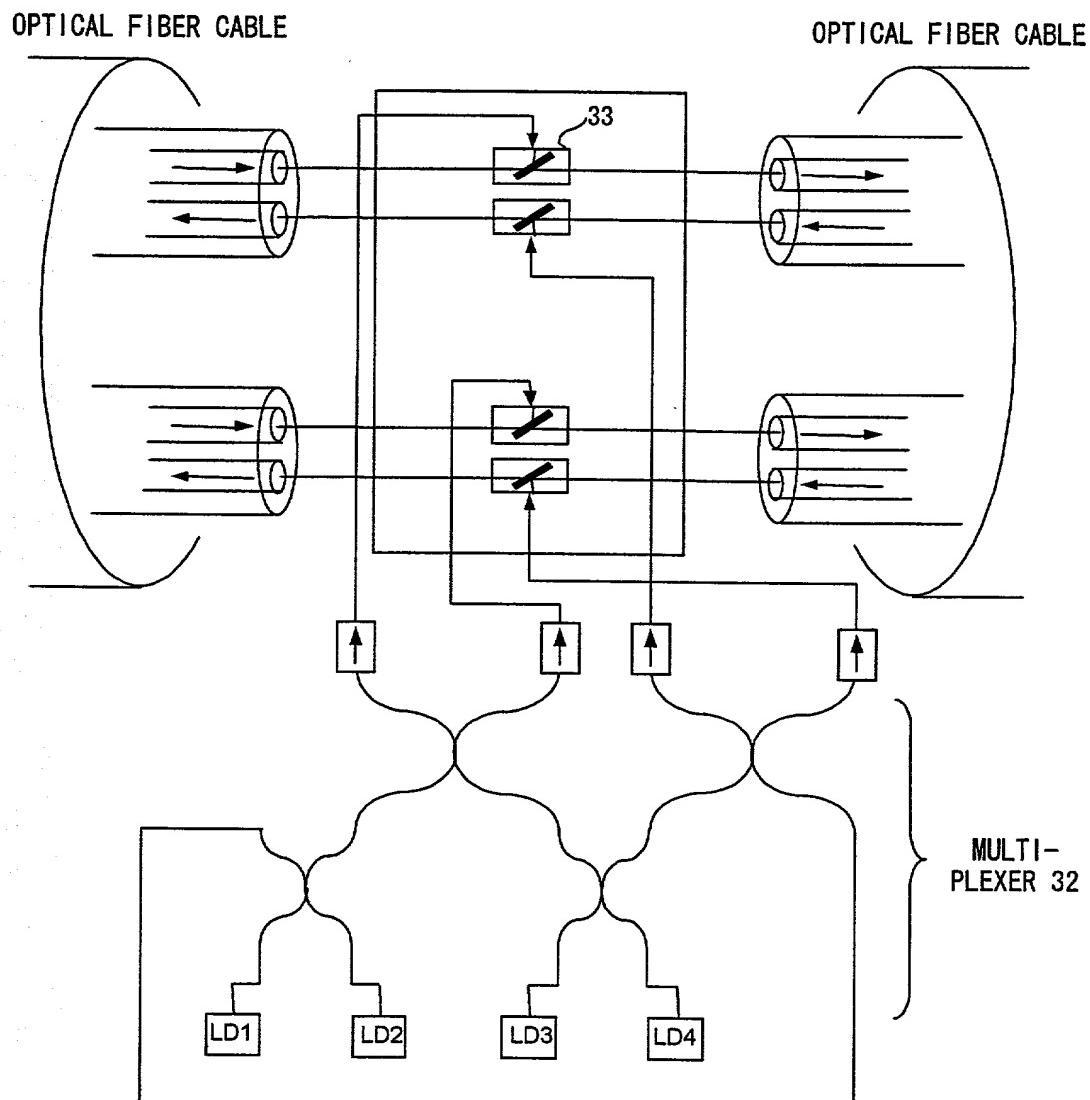


FIG. 12



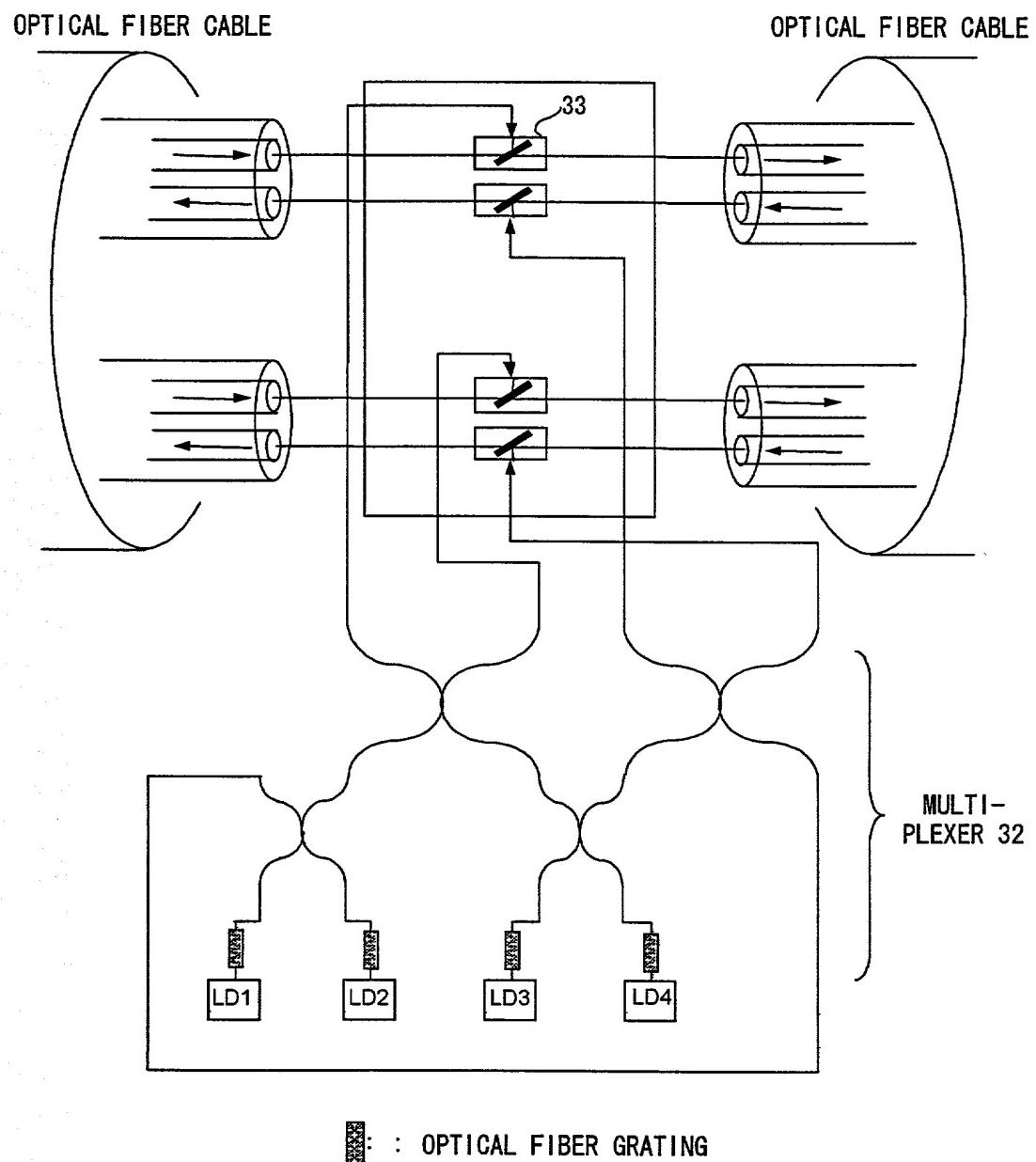
VATT : OPTICAL VARIABLE ATTENUATOR

F I G. 1 3

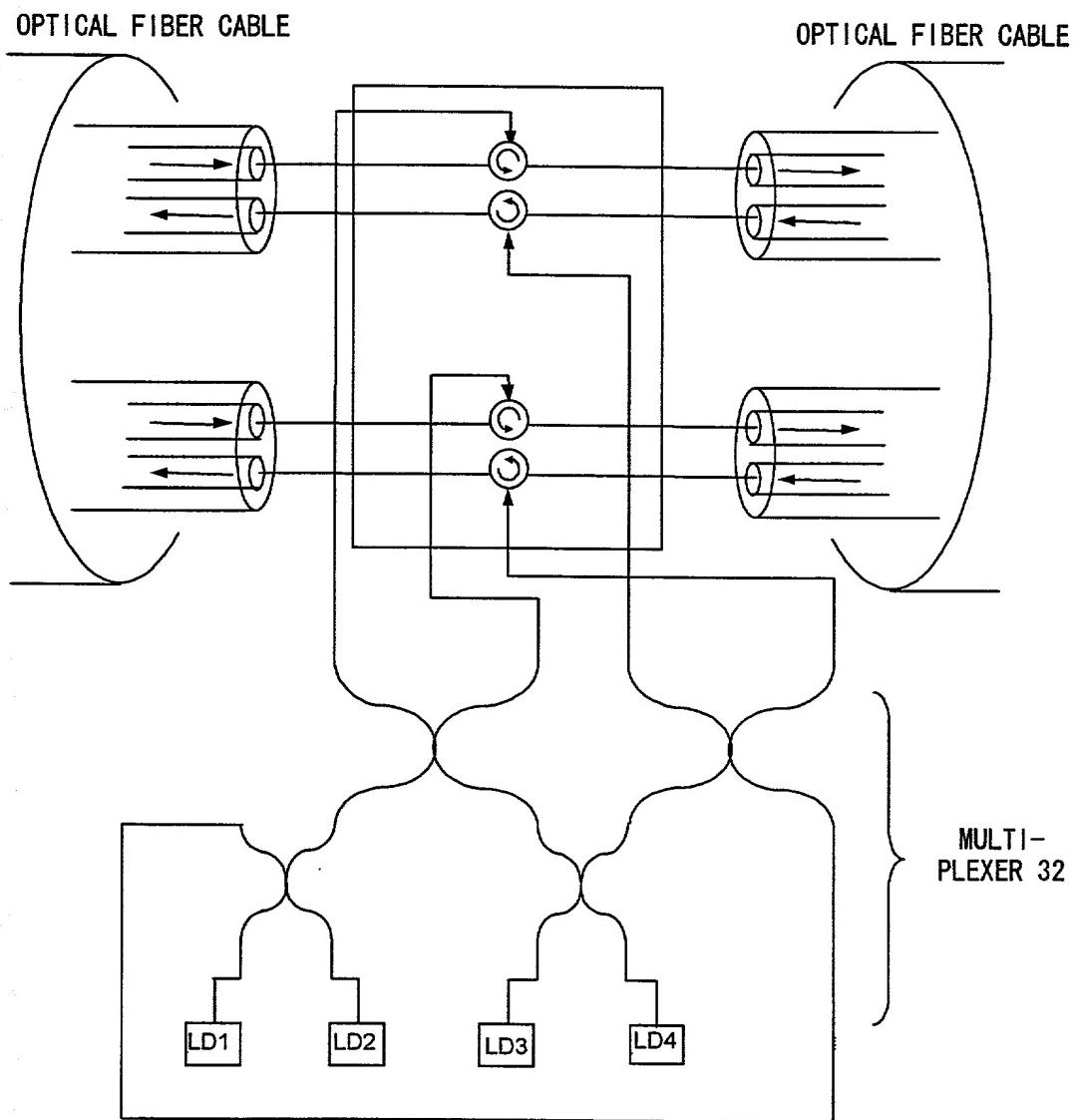


↑ : OPTICAL ISOLATOR

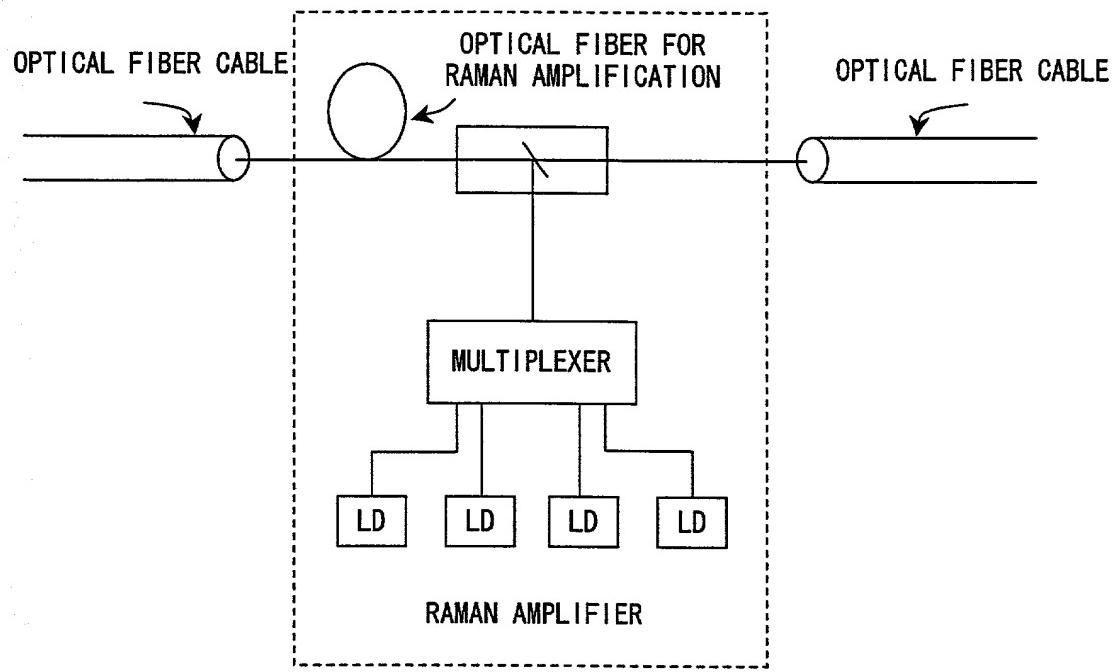
F I G . 1 4



F I G. 15



F I G. 16



F I G. 17

FIG. 18

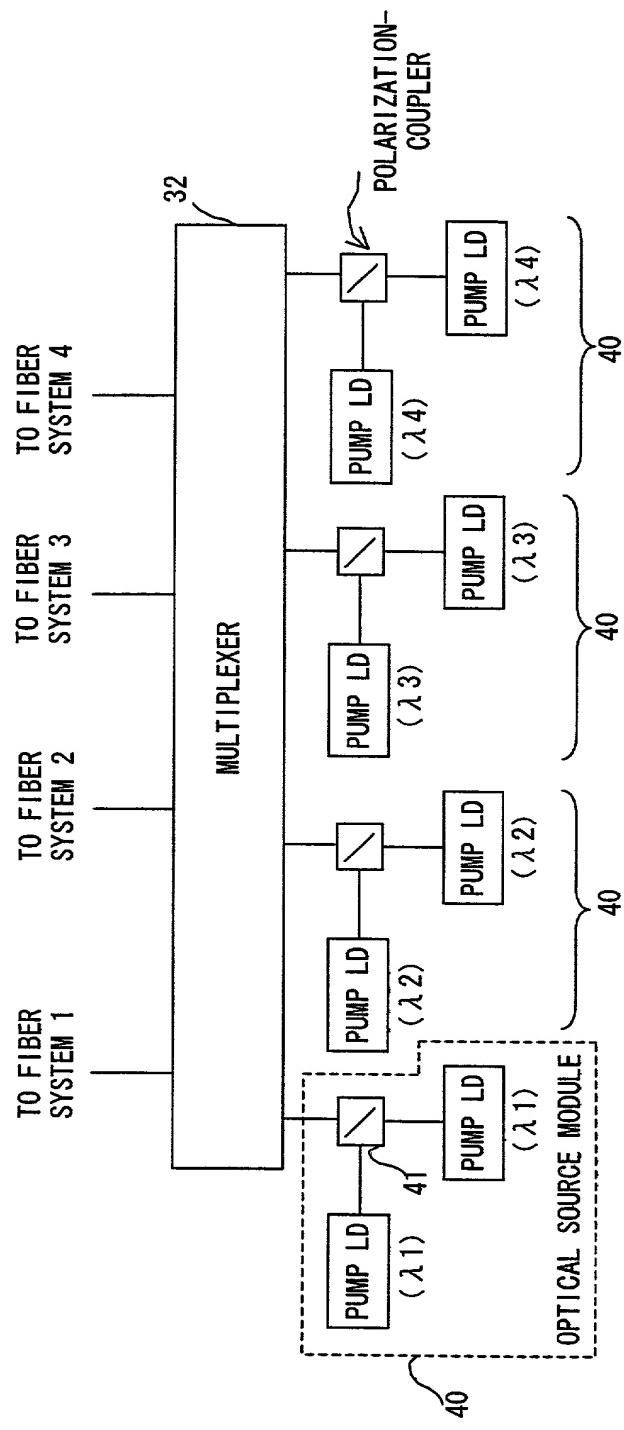
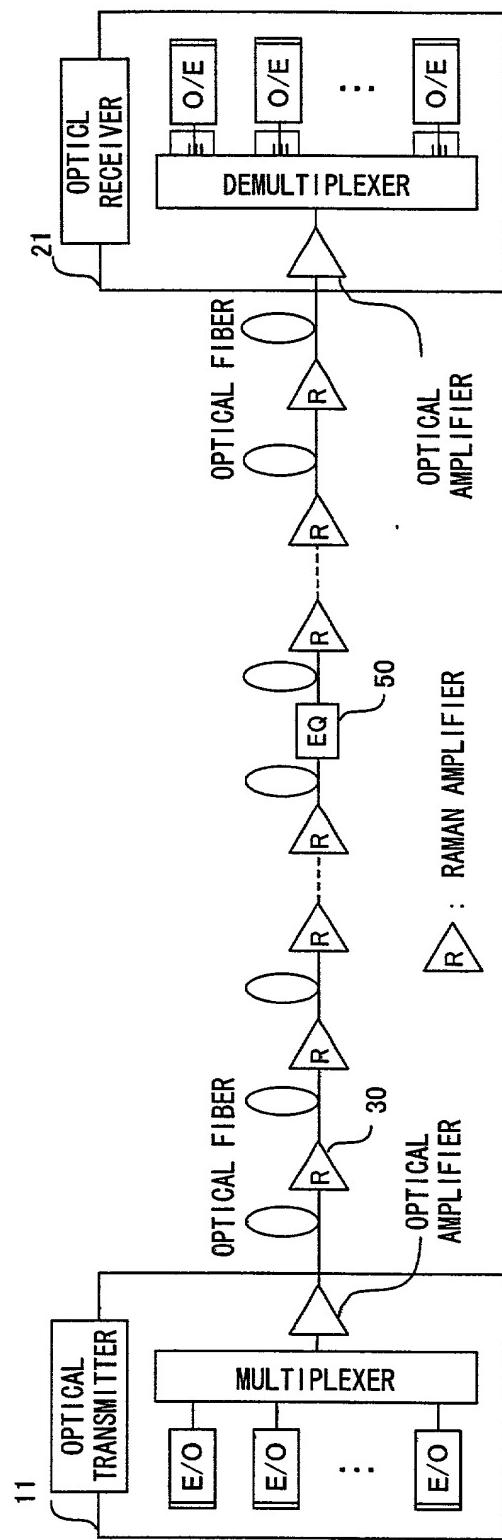


FIG. 19



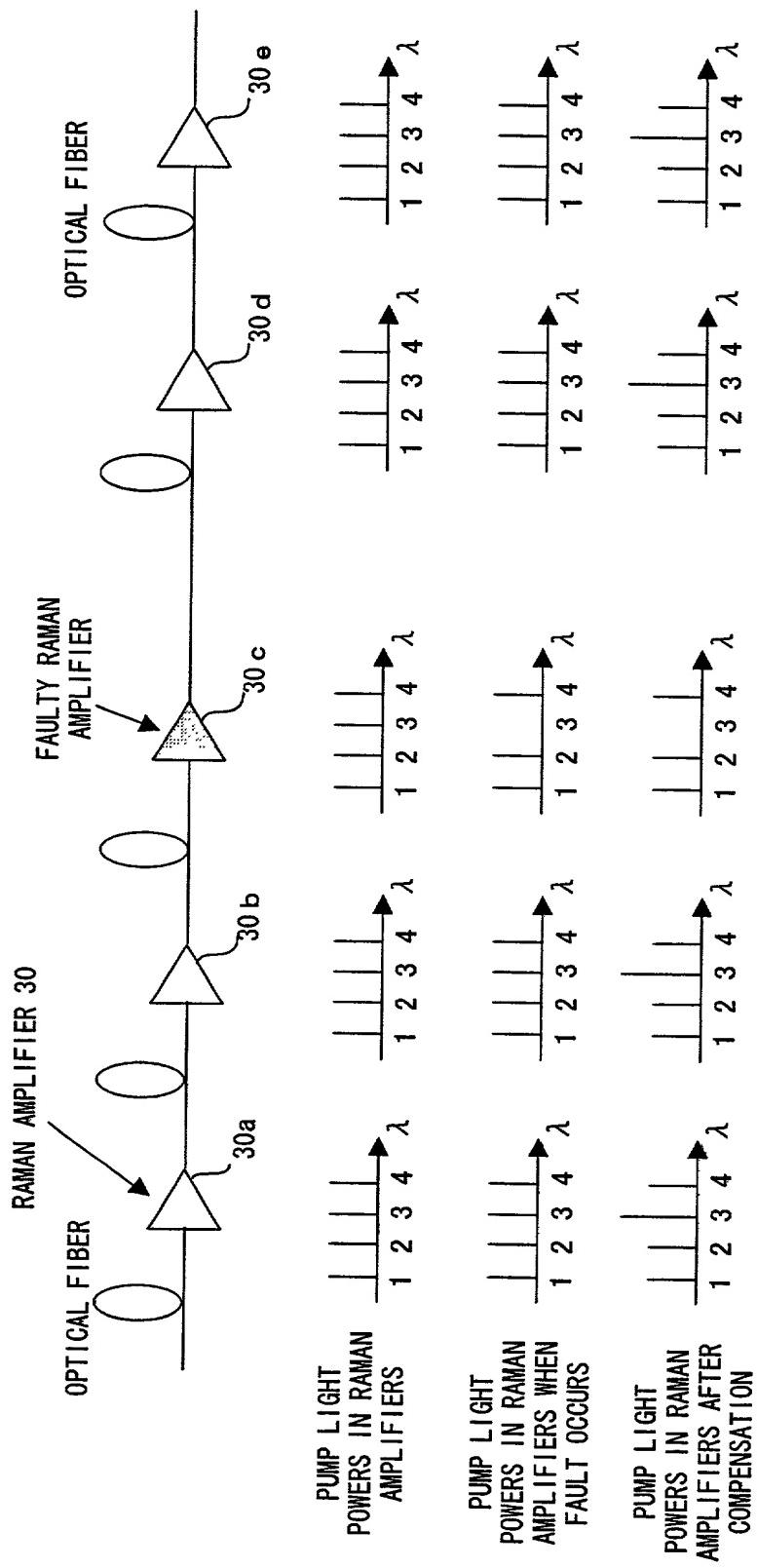


FIG. 20

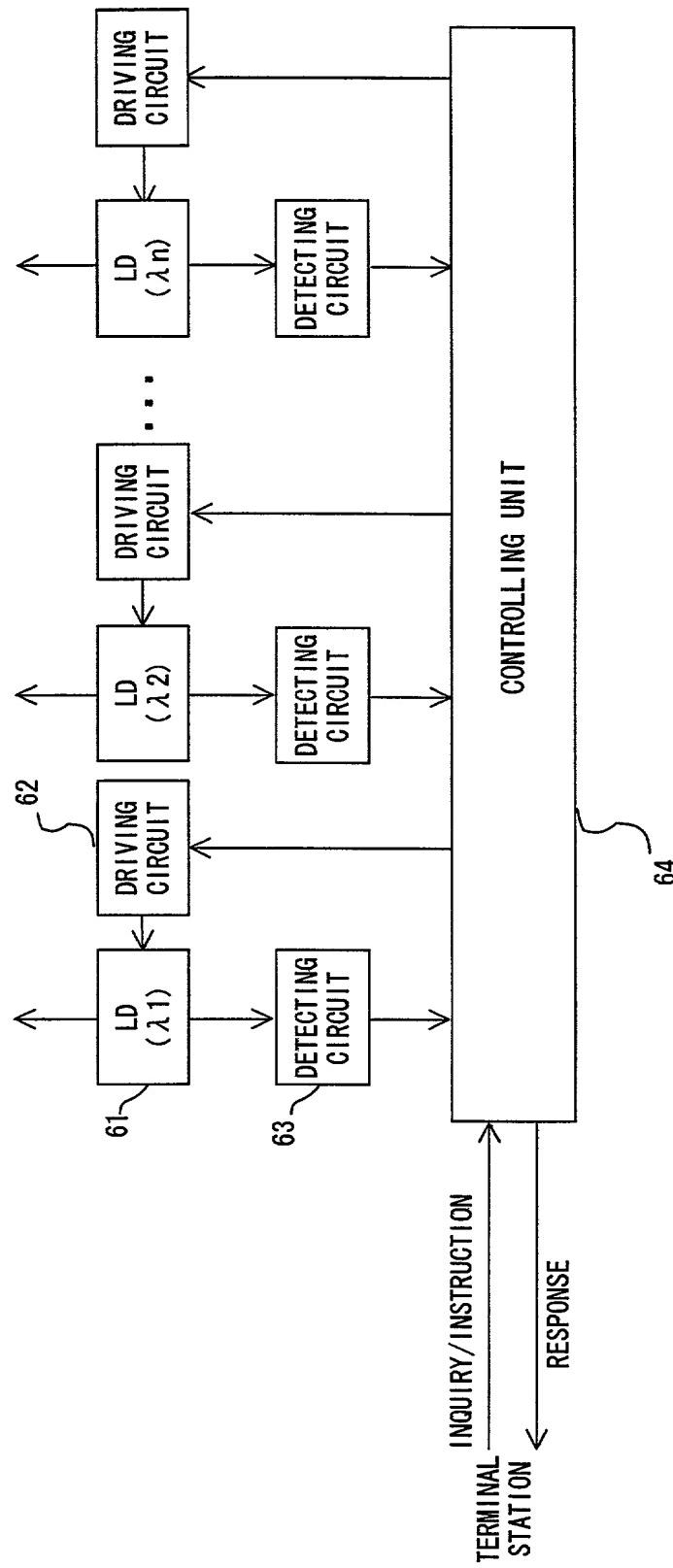
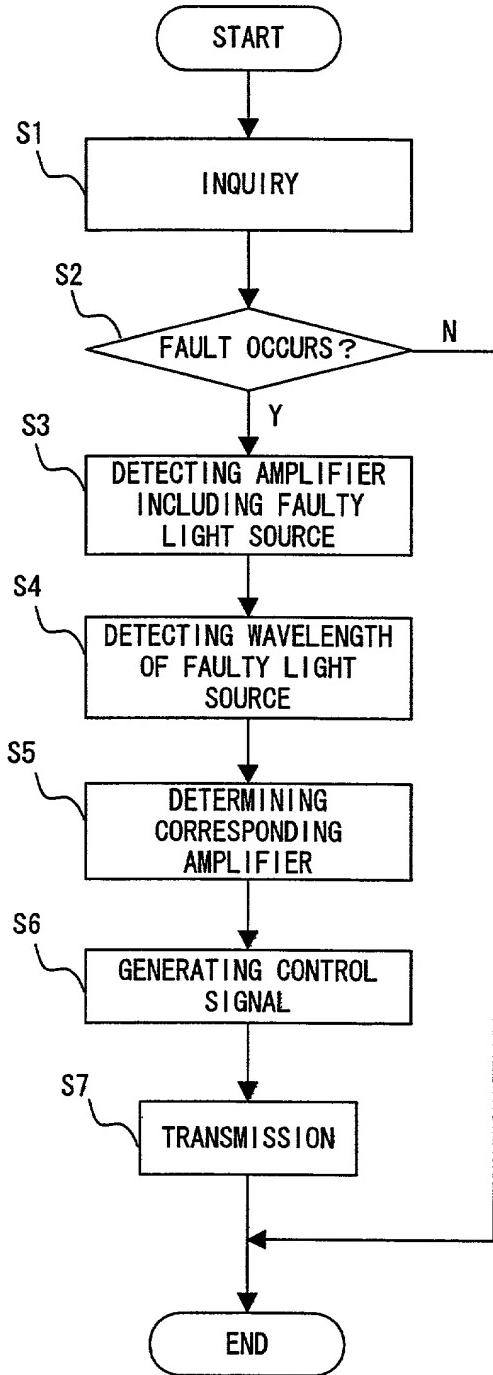


FIG. 21

64



F I G. 2 2

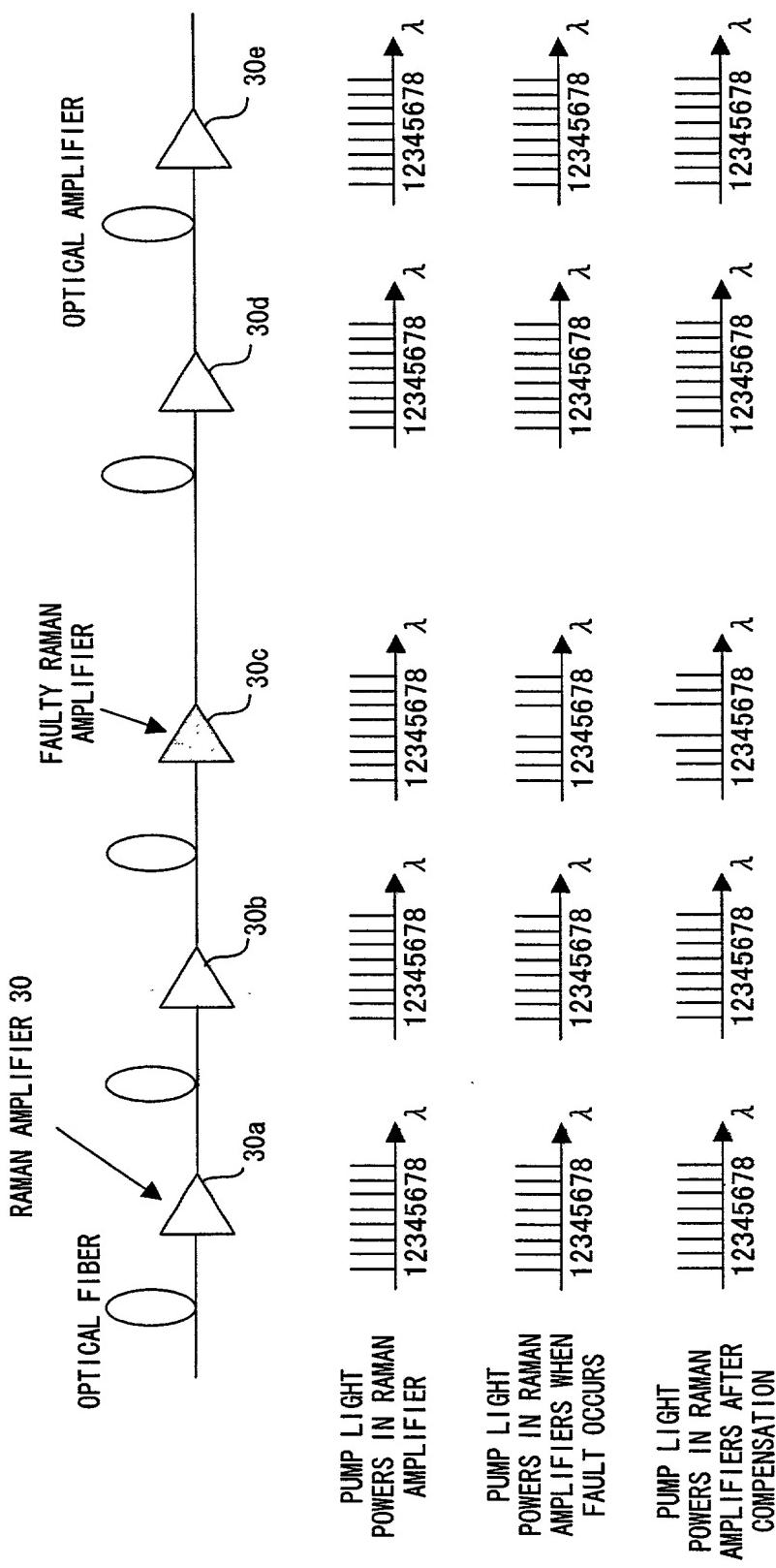
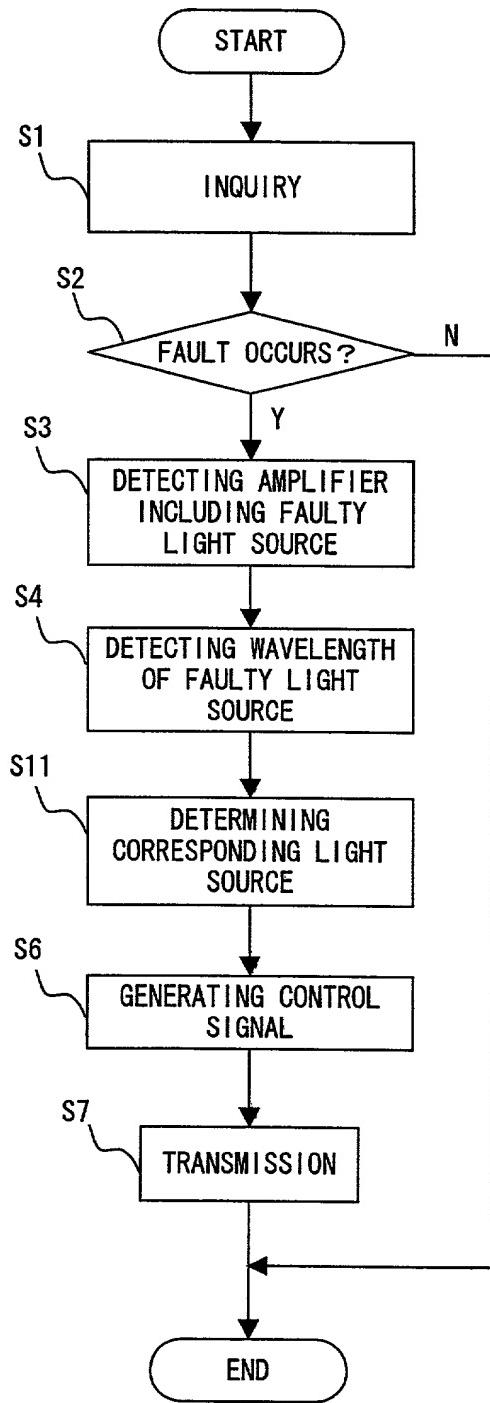
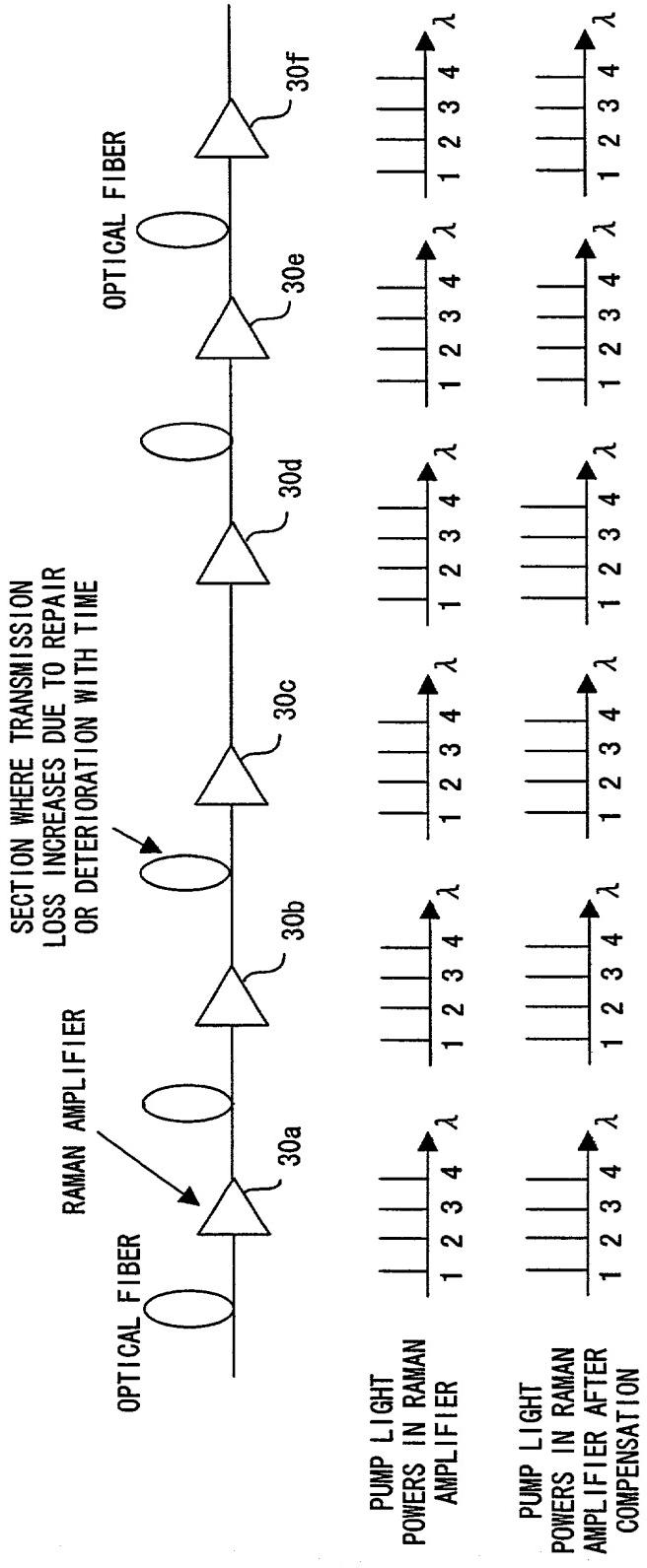


FIG. 23

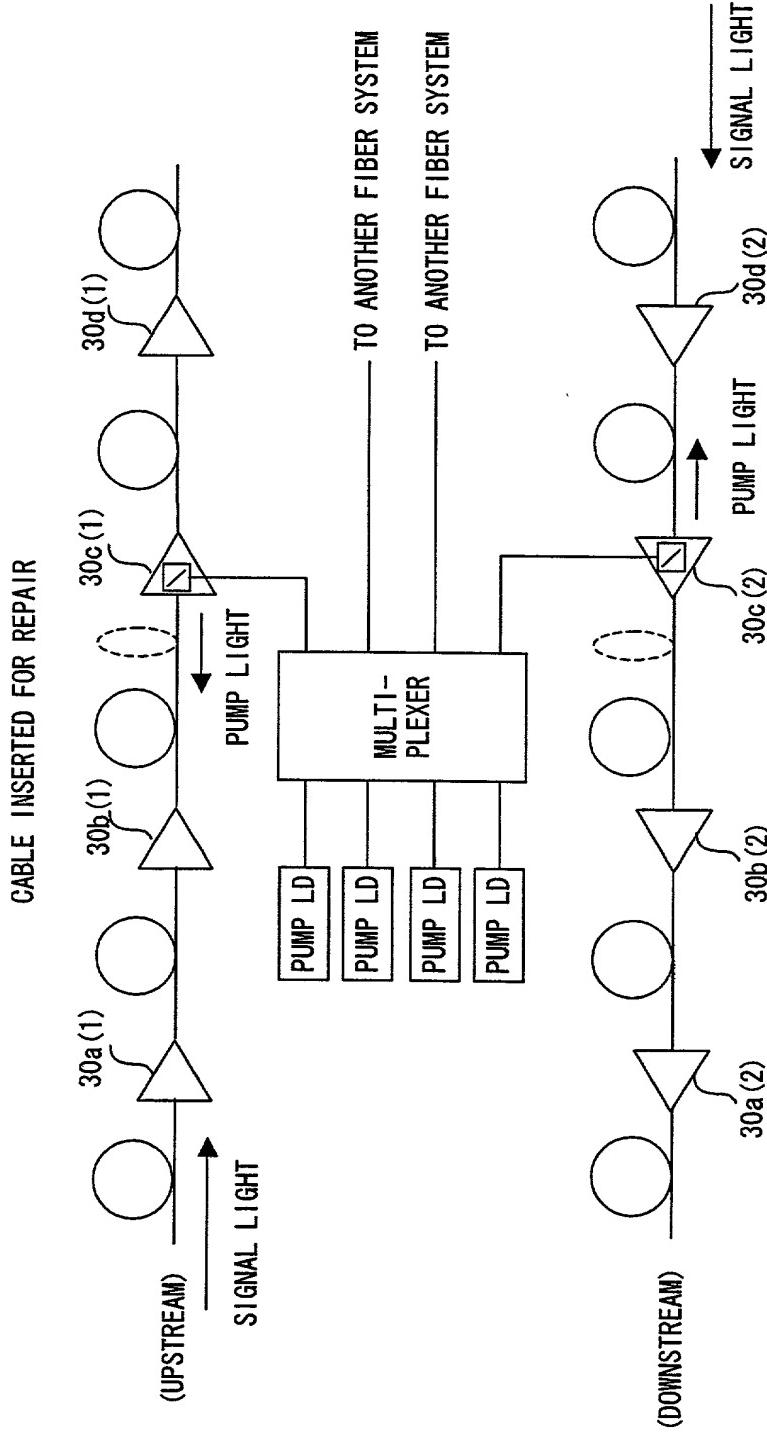


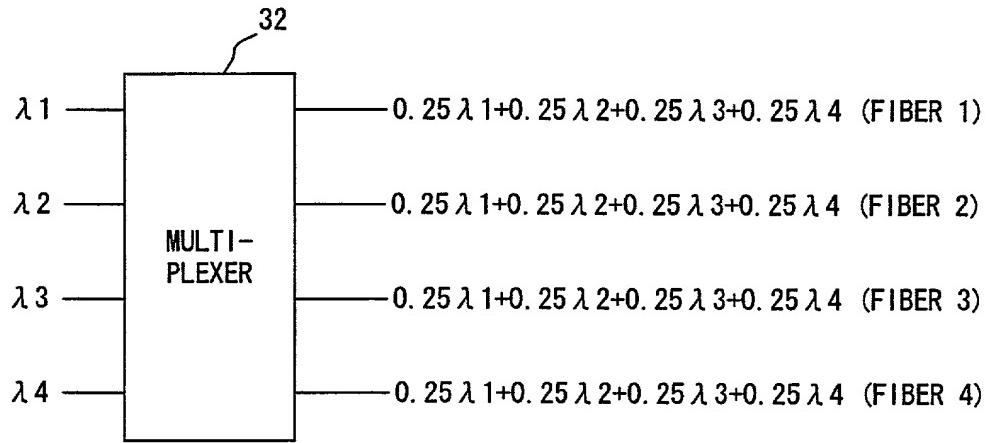
F I G. 24



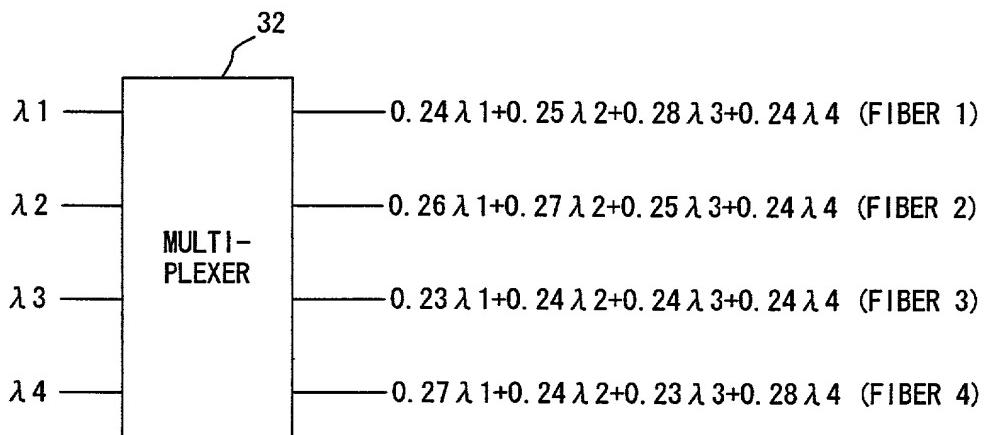
F I G. 2 5

FIG. 26

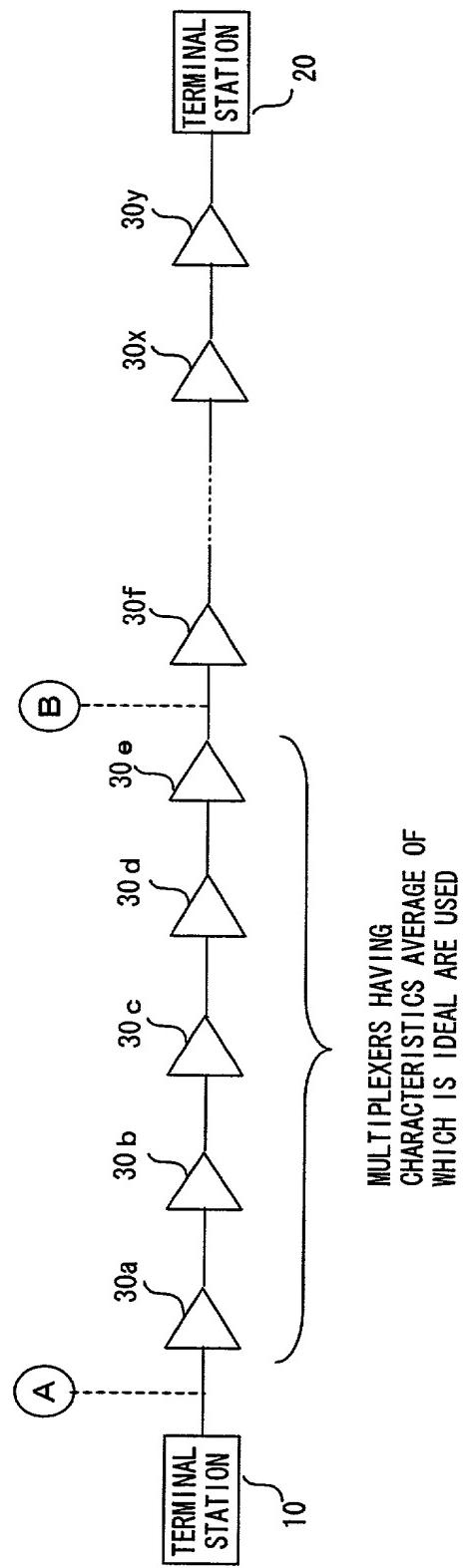




F I G. 27 A



F I G. 27 B



MULTIPLEXERS HAVING  
 CHARACTERISTICS AVERAGE OF  
 WHICH IS IDEAL ARE USED

FIG. 28